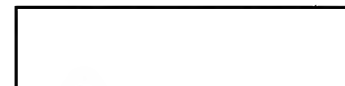


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17 December 1958

MEMORANDUM FOR 

SUBJECT: Reorientation of SENTRY Program

1. Objectives: The basic objectives of the ARPA Sentry R&D program should become as follows:

- a. Develop an improved area reconnaissance system based on the use of recovery techniques.
- b. Develop a joint surveillance system based on the use of the film read out technique.
- c. Continue development of the ferret reconnaissance and surveillance system.

2. General Outline of Desired Program.

The surveillance system is to be based on the use of the presently planned film read out techniques, the reconnaissance system is to be based on the use of the film recovery technique. Since it appears that a much improved reconnaissance camera system could be available for flight test in early 1961, the development of a recoverable Atlas boosted capsule should be scheduled so as to meet a first camera flight test date in early 1961. Since it appears that the 36" surveillance camera system could be available for flight test in mid 1961, the development of an Atlas boosted capsule and associated ground equipment should be scheduled so as to meet a first system prototype flight test date in mid 1961.

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3. Funding:

The funding for the ARPA parts of the Sentry program should be assumed to be as follows:

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Expenditures under the ARPA program are to include only such development and installation of equipment as is essential to the testing of an engineering prototype of each of the various systems. In the case of the calendar 1959 Thor program, only thirteen flight attempts are to be included under the AREA funding.

4. Priorities:

In the event that it is not possible to achieve all basic objectives outlined in 1 and 2 above, priority should be given to achieving the improved area reconnaissance system.

5. Suggested List of Detailed Program Changes:

The following are suggestions of changes which should be made in the presently planned program in order to meet the objectives in paragraphs 1 and 2 above under the fund limitations in 3 above.

a. Delete program to use high energy fuels in second stage of launch vehicle.

b. Delete development of 6" read-out camera from program, and delete all testing (ground or space) of components of the 6" system, except where these are identical, or very similar to, components of the 36" system.

c. Consider very carefully the possible use of the recoverable Atlas space vehicle as a flying test bed for flight test of components of the surveillance camera system and the ferret system.

d. Schedule development and flight testing of the recoverable Atlas launched vehicle so as to be able to make use of it in connection with the 1960 operational recovery program, should such use become desirable or necessary for any reason, such as a requirement for more film capacity, addition of new gear needed for improved recovery, addition of any other components which might improve the system, or poorer performance of the Thor system than now anticipated.

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e. Consider carefully any changes, particularly in connection with subsystem H and I, which would be brought about by the change in the requirement for the read out system from use in an area reconnaissance system to use in a joint surveillance system only, and modify the program accordingly.

6. Operational Program:

ARPA should support but not fund the operational program as outlined by the AFBMD in its September 15 program plan and its December 16 presentation to ARPA. This includes a 17 Thor program in calendar 1959, plus an additional 12, largely in calendar 1960.

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Chief Scientist